REMARKS

Status of Claims

Claims 6-8 and 16 are allowed.

Claims 9 and 12-14 are rejected.

Claims 10, 11 and 15 are objected to.

The continued allowance of claims 6-8 and 16, as in the prior Action and as indicated in Item 7 of the present Action, is acknowledged and appreciated.

The objected to status of claims 10, 11 and 15 and the indication that the same would be allowable if suitably rewritten into independent form, as indicated in items 6 of the Action, is acknowledged and appreciated.

The continued rejection of claims 9 and 12-14 is respectfully traversed.

Item 3: Rejection of Claims 9 and 12 for Anticipation Under 35 U.S.C. 102 (b) by Amemiya et al.; and

Item 5: Rejection of Claims 13 and 14 for obviousness Under 35 U.S.C. 103(a) over Amemiya et al. in view of Wada et al.

The rejections of Items 3 and 5 are respectfully traversed.

INDEPENDENT EVIDENCE OF EXAMINER'S ERRONEOUS INTERPRETATION OF THE AMEMIYA REFERENCE

Introduction

Counsel to Applicants conducted a computer search for such terms as "streak camera" and "IR-cut filter" as are employed in the Amemiya et al. publication (see left column on page 965, under the heading Part 2: "Experimental Results," - - and particularly in the second paragraph, next to the last line, as to "streak camera" and in the third paragraph, second line, as to "optical filter.") The attached Articles uncovered by the search and listed below, make it clear that in the use of a streak camera, filters of various different transmission band width characteristics are employed, selectively, to filter out specific such frequencies of light emissions while permitting yet others to pass through the filter and which are photographed by the streak camera. It is inherent in the nature of such filters that they are an integral part of the streak camera and not a part of a PDP, the subject of the experimental study reported in the Amemiya et al. publication.

Amemiya et al. Does Not Teach Use of an IR Cut Filter as a Permanent Part of a PDP Cell:

In Amemiya et al., FIG. 2-1 illustrates a streak camera image of phosphor light component of light emitted by the PDP cell, and selectively passed by an IR cut filter which blocks transmission of the IR light component .

FIG. 2-2 then shows a streak camera image of an (Ne) orange light component, selectively passed by a 625 nm filter.

FIG. 2-3 shows a streak camera image of Xe infrared light, selectively passed by a filter with an 810 nm - 830 nm pass band.

FIG. 3 illustrates Xe infrared light distributions as a function of electrode length, for four different electrode lengths.

FIG. 4 illustrates a ratio of phosphor (as in FIG. 2-1) and Xe-infrared luminance (as in FIG. 2-3) to electrode length (as in FIG. 3).

FIG. 2-3 and FIG. 3 and the data in FIG. 4 relating to Xe-infrared intensities (from both the cathode and anode areas) relate to images and data processed from those images produced when no IR cut filter is present.

For a better understanding of the images in the Amemiya et al. photographs of Figs. 1-3, reference may be had to the Exhibit A "Guide to Streak Cameras," copy attached. Exhibit A makes inescapably clear - - as was urged throughout prosecution but uniformally rejected by the Examiner - - that the Amemiya reference is not teaching the importance of blocking infrared and, moreover, is silent as to where the IR cut filter employed in relationship to producing Fig. 2-1 is located in the experimental apparatus. Instead, Amemiya is merely setting forth an explanation of experimental results, relating to intensities of light, output by a PDP cell, after passing through three different filters of respective, different wavebands (as listed above for Figs. 2-1, 2-2 and 2-3), and for different locations relative to the cathode and anode of the PDP cell (Fig. 1).

Of the three frequency bands illustrated in the three images of Fig. 2, the final image, i.e, Fig. 2-3, is that of Xe Infrared light ..." which is passed by the 810-830 nm pass band filter and received by the streak camera. That circumstance, alone, supports the premise which Applicants have advanced throughout prosecution, that any IR cut filter employed in generating the images of Fig. 2-1 is removed for producing the images of Figs. 2-2 and 2-3.

Indeed, that premise is further supported by Fig. 3 of the reference, in which Xe infrared light distributions are shown for various different electrode lengths - - images which, again, inherently require the absence of any IR cut filter.

Proceeding in logical sequence, Fig. 4 then shows plots of the ratio of phosphor and Xe infrared luminance to discharge current verses electrode length - - which inherently are requiring that no IR cut filter is employed in producing the data plotted in Fig. 4.

The Relevant Literature Uncovered by the Computer Search Makes it Clear that Any Filters Employed by Amemiya et al. are Integral Parts of the Streak Camera Used in Developing the Experimental Results

The attached Exhibit A "Guide to Streak Cameras" published by Hamamatsu, a Japanese manufacture of such cameras, at page 8 specifies different spectral response characteristics for respective, different models of the Hamamatsu sweep units - - which make clear that any filter, whether functioning as an "IR cut" filter or as a filter passing IR light to produce an image of same, is included as a part of the streak camera.

At page 8 of Exhibit A, model No. "C5680" is identified as "the streak camera which is most ideal for general purposes. ...the appropriate streak tube (photocathode) can be selected to accommodate light ranging from X-rays to the near infrared rays...." The adjacent column entitled "Spectral Response Characteristics" lists five different such "spectral response characteristics" and the subsequent adjacent columns specify different "plug-in type sweep units" and their respective "dynamic ranges." Clearly, these are filter options which a user may select for use in the camera. Page 12 of Exhibit A under the heading "Input Optics" defines same as being "Optics which is positioned in front of the photocathode of the streak tube. ...it consist of a slit section and a lens section. Various models are available, classified by the spectral transmittance and brightness of the lens system."

Exhibit B is a Japanese language catalog of the Hamamatsu C5680 streak camera. On page 3 of the catalog there appear, in handwriting, English language translations of the captions accompanying the figures on the page. As shown in the drawing, the C5680 streak camera comprises three major components, of "input optics," "streak tube" and "output lens." "Input Optics" is shown as being positioned directly in front of the streak tube. It is clear that a filter portion of the "input optics" thus is incorporated in the C5680 streak tube body.

Four different light transmission ranges of the "Input Optics" are set forth in a table beneath the image of the streak camera in the left column. For example, A 1976-01, which is

one of the available "input optics," provides a light transmission range of 200 nm – 1600 nm.

A reason that the input optics inherently is a part of the streak camera is so that light of the desired frequency range is all that is passed through the streak tube and contained in the lens output. In other words, if, as the Examiner proposes, a filter used in the Amemiya et al. experiments was placed on, or in, the PDP, light passing into the streak camera would be not only the light passing through the filter but also light which is not passing the filter - - which would lead to altogether unreliable results.

Exhibit C: "Control and Readout System for Streak Cameras" provides extensive discussions of precision data processing and control functions which render clear that the light entering the streak camera must be controlled very precisely if meaningful data is to be achieved. Note that streak cameras are employed with "accessory devices" of many different types which would include selectively changeable filters. See also, Exhibit C, "Control & Readout System for Streak Cameras," at page 2, col. 2, under the heading "Accessory Devices".

Exhibit D: "Streak Camera Operating in the Mid Infrared" indicates that a streak camera having a specific response characteristic relates to the camera filtering capability - - and not an IR cut filter applied on the surface of a PDP.

Exhibit E': "What is a Streak Camera"? provides interesting background information regarding operation of such cameras. Note the explanation in the right hand column:

> "A streak tube (detector) can be selected to match any wavelength range from X rays to near infrared rays."

(Emphasis Added) It is clear that the streak tube, or camera, characteristics are controlled, not the wavelength which is passed from a source, such as a PDP, to the streak tube.

Conclusion

It is respectfully submitted that the only rational interpretation to place upon the streak tube images in Fig. 2 of Amemiya et al. is that they were taken by a streak camera having built-in, variable filters for recording images of the three different light frequencies, as specified in Amemiya et al., Figs. 2-1, 2-2 and 2-3. Clearly, this is not a teaching of a filter placed on or within a PDP to permanently block passage of infrared light from the PDP cell, as the Examiner asserts.

RESPONSE TO THE FINAL REJECTION

Item 3: Rejection of Claims 9 and 12 for Anticipation Under 35 U.S.C. 102 (b) Amemiya et al.

The rejection is respectfully traversed.

In Item 3, the last two lines, appearing on page 3 of the Action, quote from Applicant's "Explanation of Relevancy of References" in Attachment 1(e) in the IDS filed on October 19, 2004, Exhibit F, as follows:

> "The IR cut filter inherently removes an unnecessary light in observing a luminance of phosphor light."

However, the quotation is misleading, since incomplete. Specifically, the Examiner's item 3 omits the extensive discussions in Attachment 1(e) of Exhibit F, of the differences between the present invention and the admitted prior art of Amemiya. As explained therein in Item (3) on the second page of Exhibit F, the IR cut filter is used in that reference only for removing "an unnecessary light in observing a luminance of phosphor light as shown in Fig. 2(1)...[whereas] an infrared light omitted from 5% Xe gas is observed in Fig. 2(3)." It follows that no IR cut filter was used in taking the photograph of Fig. 2(3). The explanation goes on to point out:

> "Needless to say, it does not disclose a concrete structure of PDP for cutting near infrared, such as a protection plate and a construction of a casing as in claim 6 and a protection plate at a predetermined distance from a display panel as in claim 16.
>
> (4) Distinction
> As explained in the above, though a IR-cut filter is used for spectrum observation in the paper, it is not understood to constitute a necessity of an IR-cut filter in a PDP product. IR-cut filter is only used for observing a luminescence of. phosphor light in the paper.
>
> And it is not recognized to be a problem caused by infrared light, such as malfunction of near infrared remote control for domestic electric appliances in the home, and a necessity for solving of the problem by removing near, infrared emitted from Xe gas.
>
> As such, the present invention is not obvious, based on prior art in the paper."

(Exhibit F)

The foregoing Articles A-F and the discussion hereinabove are submitted to fully underscore and reinforce the arguments advanced before, that Amemiya is dealing with experimental observations of selected wavelength of emissions from a PDP and has no

consideration whatsoever of overcoming a problem where a PDP emits infrared light, which can produce malfunctions of nearby infrared remotely controlled domestic electronic appliances in a home, as an example.

Item 8: Examiner's Reply to Applicant's Arguments.

At page 5, the first paragraph, Applicants have addressed above the Examiner's observation that the reference does not mention anywhere "that the IR filter is removed in the final finished stage." This statement is obtuse since there really is no "final finished stage" taught my Amemiya et al. In the second paragraph at page 5, the Examiner now asserts that which he "intended to state..." in the prior Office Action - - that whereas Amemiya "do not mention as to where the near IR suppressing material (IR-cut filter) is located in Amemiya's device ...[that] ...of course it was, and is, the Examiner's position that the Amemiya device does include the near IR suppressing material (IR-cut filter)."

The Examiner unfortunately fails to explain what the "Amemiya's device" includes - - but from the article it is clear that Amemiya measures emission from a PDP cell using a commercial streak camera which incorporates, as part of its "input optics," selective different filters to produce the images shown in the article.

Conclusion

It is submitted that the Examiner's rejection is based on speculation and the foregoing as shown that the Examiner errs completely in his understanding of the technology involved in and disclosed by the reference.

The pending claims patentably distinguish over the reference and, there being no other objections or rejections, it is submitted that the application is in condition for allowance, which action is earnestly solicited.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

STAAS & HALSEY LLP

Date: November 28, 2005

By: _____
H. J. Staas
Registration No. 22,010

1201 New York Avenue, NW, Suite 700
Washington, D.C. 20005
Telephone: (202) 434-1500
Facsimile: (202) 434-1501

CERTIFICATE UNDER 37 CFR 1.8(a)
I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450
on November 28, 2005
STAAS & HALSEY
By: _____
Date: 11/28/05